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10/648,601

08/25/2003

Hong-Shan Wei

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EXAMINER

ABDELSALAM, FATHI K

ART UNIT

PAPER NUMBER

3689

MAIL DATE

DELIVERY MODE

10/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/648,601

Applicant(s)

WEI, HONG-SHAN

Examiner

Fathi Abdelsalam

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3689

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/20/2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The following is a final office action in response to communications received on 7/20/2008. Claims 1-3 were withdrawn. Claims 4 and 11 have been amended. Therefore, claims 4-11 are pending in this application.

Response to Amendments

2. Applicant has overcome the 35 U.S.C. §101 Double Patenting rejection over claims 1-4 of copending Patent No. 6,889,106 in relation to claims 4-11 by amending independent claims 4 and 11, adding more limitations therein.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zweben et al. (US 6,216,109), in view of Borg et al. (US 5,835,898), hereinafter referred to as Borg.

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5. Regarding **Claim 4**:

Zweben discloses a production capability simulating method, comprising the steps of:

selecting an original MPS (master production schedule) to be simulated ([Zweben col. 5, lines 28-40], "A predetermined initial schedule..." and "establishing an unacceptable initial schedule as a current schedule");

selecting a simulation mode can be a purely mental step taken while performing a simulation and is commonplace to those of ordinary skill in the art at the time of the invention;

simulating the original MPS according to the selected simulation mode and a default scheduling rule ([Col. 4, lines 18-23], "Another type of FCS, 'dispatching and simulation,' uses a set of rules to produce a schedule that satisfies both inventory and capacity constraints. Dispatching and simulation systems can include only very simple rules, or they can be implemented as rule-based expert systems and implement a more complex set of rules"); and

generating simulation results (Zweben Claim 1 in its' entirety embodies a quintessential simulating method producing results) and see also ([Zweben Abstract], "produce a solution that is near optimal with respect to all constraints");

determining whether there are one or more contingencies that require rescheduling of the original MPS and amending the original MPS if there are said contingencies, and returning to the simulating process regarding the amended MPS ([Zweben col. 1, lines 33-36], "Development of a schedule that resolves the many possible conflicts that may arise during conduct of the activity") and ([claim

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1 & col. 5, lines 44-47 (respectively)): "repairing one or more constraint violations of the current schedule by modifying the current schedule without relaxing the set of pre-defined constraints and determining a revised schedule from the schedule modification or modifications made by the constraint violation repair or repairs" and "repeating the steps of repairing one or more of the constraint violations of the current schedule, determining a revised schedule"); and

generating an optimized MPS if there are no said contingencies or when said contingencies have been eliminated by applicable previous steps hereof, and generating weekly production schedules based on the optimized MPS ([Zweben Abstract], "All constraints on the scheduling activity can be evaluated simultaneously to produce a solution that is near optimal with respect to all constraints") and ([Zweben col. 5, lines 43-50], "selecting one of the revised schedule or the current schedule as the new current schedule; vii) repeating the steps of repairing one or more of the constraint violations of the current schedule, determining a revised schedule, calculating a score for the revised schedule, and selecting one of the revised schedule or the current schedule as the new current schedule; and viii) selecting one of the revised schedules as the final schedule").

Zweben does not explicitly disclose the system generating a simulation report based on the simulation results. Borg, however, teaches that "the current practice of the larger companies in the manufacturing industry is to use one or more computer-generated reports, either on paper or displayed on a monitor, to identify areas in the manufacturing facility where the work load exceeds the available capacity" (col. 1, lines 43-46).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the method of Zweben so as to have included the generation of simulated production reports, as taught by Borg, in order to "allow for faster updating and easier mathematical manipulation of production data" (col. 1, lines 35-38), since so doing could be performed readily and easily by any person of ordinary skill in the art, with neither undue experimentation, nor risk of unexpected results.

6. Regarding **Claims 5 and 6**:

Zweben discloses in the background of the invention well known knowledge of a production capability simulating method, wherein the selected simulation mode is an RCCP or MRP simulation mode ([Zweben col. 3, lines 19-25], "Once MPS and rough cut capacity planning have been used to develop a satisfactory build schedule for the supply of finished goods, the production requirements of the build schedule are supplied to a material requirements planning (MRP) system.") Further more, Zweben discloses "in the manufacturing context for example, the system and method according to the invention simultaneously accomplish all of the scheduling functions associated with the scheduling techniques discussed above: master production scheduling, rough cut capacity planning, material requirements planning (or manufacturing resource planning), capacity resource planning and finite capacity scheduling" (col. 6, lines 34-41).

7. Regarding **Claims 7, 8, 9, and 10**:

Zweben discloses a production capability simulating method. Zweben also discloses well known prior art knowledge wherein "A build schedule, as developed by a MPS system for example, is input into the rough cut capacity planning system and a determination is made as to whether sufficient resources exist to implement the build schedule" (col. 2, lines 61-65).

Zweben does not explicitly disclose the system generating a simulation report wherein the simulation report includes information on one or more workstations that have insufficient production capability and on one or more production materials that are in shortage.

Borg, however, teaches that "the current practice of the larger companies in the manufacturing industry is to use one or more computer -generated reports, either on paper or displayed on a monitor, to identify areas in the manufacturing facility where the work load exceeds the available capacity" (col. 1, lines 43-46).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the method of Zweben so as to have included the generation of simulated production reports detailing information on contingencies comprising insufficient production capability of one or more workstations and one or more insufficient production materials, as taught by Borg, in order to "allow for faster updating and easier mathematical manipulation of production data" (col. 1, lines 35-38), since so doing could be performed readily and easily by any person of ordinary skill in the art, with neither undue experimentation, nor risk of unexpected result.

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8. **Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zweben et al. (US 6,216,109), in view of Gleditsch et al. (US 6,393,332), hereinafter referred to as Gleditsch.**

9. Regarding **Claim 11**,

Zweben discloses a production capability simulating method comprising:
retrieving relevant data ([Zweben], "A system according to one embodiment of the invention includes a memory device and a processing device. The memory device is used to store various information such as: i) an unacceptable initial schedule that is supplied to the system; ii) information regarding each of a multiplicity of constraints, the constraint information including a description of the constraint");

maintaining MPS (Master Production Schedule) parameters, wherein the MPS parameters comprises production modes ([Zweben Claim 1], "A method for scheduling a complex activity that is governed by a set of pre-defined constraints including consumable resource constraints") and ([Zweben col. 3, lines 23-32], "As input, the MRP system accepts the production requirements of the build schedule, subassembly and raw materials inventory levels (to net production requirements against existing inventory), bills of materials (BOMs) associated with the production of the finished goods and subassemblies, and information regarding production and material ordering lead times");

generating an original MPS according to the MPS parameters ([Zweben col. 5, lines 28-40], "A predetermined initial schedule..." and "establishing an unacceptable initial schedule as a current schedule");

simulating RCCP (Rough-Cut Capacity Planning) and MRP (Material Requires Planning) ([Zweben col. 3, lines 19-25], "Once MPS and rough cut capacity planning have been used to develop a satisfactory build schedule for the supply of finished goods, the production requirements of the build schedule are supplied to a material requirements planning (MRP) system."); and

determining whether the production capability and the production materials can meet the demands of the original MPS ([Col. 2, lines 47-54], "MPS accepts demand requirements as input, i.e., the quantity of finished goods needed at particular times. The demand requirements are forecasted and/or actual needs netted against existing inventory. MPS develops a schedule for the replenishment of the finished goods inventory by scheduling the production and/or procurement of batches of finished goods to meet the demand requirements");

amending the original MPS if there is insufficient production capability or lack of production materials ([Zweben claim 1 & col. 5, lines 44-47], "repairing one or more constraint violations of the current schedule by modifying the current schedule without relaxing the set of pre-defined constraints and determining a revised schedule from the schedule modification or modifications made by the constraint violation repair or repairs" and "repeating the steps of repairing one or more of the constraint violations of the current schedule, determining a revised

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schedule") and See also ([Col. 22, lines 39-41], "there are insufficient raw materials available at any other time on the schedule") relating to repairing the problem of insufficient production capability or lack of production materials;

generating an optimized MPS after one or more amendments of the original MPS ([Zweben Abstract], "All constraints on the scheduling activity can be evaluated simultaneously to produce a solution that is near optimal with respect to all constraints"). See also ([Zweben claim 1 & col. 5, lines 44-47], "repairing one or more constraint violations of the current schedule by modifying the current schedule without relaxing the set of pre-defined constraints and determining a revised schedule from the schedule modification or modifications made by the constraint violation repair or repairs" and "repeating the steps of repairing one or more of the constraint violations of the current schedule, determining a revised schedule"). The current schedule thus becomes the "optimized MPS" (i.e. revised schedule).

Zweben does not explicitly disclose the system wherein the MPS parameters comprises the specific production modes ATP (Available to Promise) and DTF (Demand Time Fence).

Gleditsch, however, teaches a system wherein the MPS parameters comprise the specific production modes:

ATP (Available to Promise) ([Col. 7, lines 27-25], "actual customer orders 105 is the amount of products that are available to promise, ATP 114 to fulfill other customer orders"); and

DTF (Demand Time Fence) ([Col. 7, lines 13-14], "At the end of pipeline 100 is a demand time fence, DTF 102").

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the method of Zweben so as to have included the ATP and DTF functionality, as taught by Gleditsch, in order to capture a broader amount of parameters, since so doing could be performed readily and easily by any person of ordinary skill in the art, with neither undue experimentation, nor risk of unexpected result.

Response to Arguments

10. Applicant's arguments filed 7/20/2008 have been fully considered but they are not persuasive.

11. Regarding the rejection of claims 4-10 under 35 U.S.C. §103:

Zweban indeed anticipates the present invention simulating the original MPS according to the selected simulation mode and a default scheduling rule ([Col. 4, lines 18-23], "Another type of FCS, 'dispatching and simulation,' uses a set of rules to produce a schedule that satisfies both inventory and capacity constraints. Dispatching and simulation systems can include only very simple rules, or they can be implemented as rule-based expert systems and implement a more complex set of rules").

As per the argument referring to "the amended claim 4 of the present application simulates an original MPS (may be an acceptable schedule or an

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unacceptable schedule) according to a selected simulation mode and a default scheduling rule, ... determines whether there are one or more contingencies (i.e., insufficient production capability or production materials) that require rescheduling of the original MPS." The terms acceptable and unacceptable are relative terms to which the current pending production capability simulating method applies (i.e. the rescheduling of the original MPS is effectively an unacceptable MPS and rescheduling said MPS thus allows for an acceptable version--or what the current pending method refers to as "an optimized MPS") within the scope of the inventions broadest reasonable understanding by one of ordinary skill in the art at the time the claimed invention was made.

As per the argument asserting "the predetermined condition used in Zweben is different from the claimed feature of 'contingencies (i.e., insufficient production capability or production materials)' recited in amended claim 4 of the present application." See ([Col. 4, lines 18-23], "uses a set of rules to produce a schedule that satisfies both inventory and capacity constraints") which pertains to such insufficient production capability or production materials. Pertinent citations, arguments/positions, and lines of reasoning have been provided above, in the rejection.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed

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invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

12. Regarding the rejection of claim 11 under 35 U.S.C. §102:

As per the argument referring to “the pre-defined constraints and the MRP system disclosed in Zweben do not include the MPS parameters (i.e., the production modes, the ATPs, and the DTFs) as recited in amended claim 11.” See the references from Gleditsch (Col. 7, lines 27-25), as related in the rejection above, disclosing said elements.

Also, Zweben discloses generating an original MPS according to the MPS parameters ([Zweben col. 5, lines 28-40], “A predetermined initial schedule...” and “establishing an unacceptable initial schedule as a current schedule”) as recited in the above rejections. An original MPS is simply the initial schedule selected...as anyone of ordinary skill in the art at the time the claimed invention was made would readily ascertain.

As per the argument and allegation that “Zweben does not disclose, teach, or otherwise suggest the invention having the above-highlighted features as set forth in amended claim 11,” in reference to elements outlined (D)-(F). This has been categorically refuted. Indeed Zweben does disclose said elements. Pertinent citations, arguments/positions, and lines of reasoning have been provided above, in the rejection.

Conclusion

13. Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fathi Abdelsalam whose telephone number is (571) 270-3517. The examiner can normally be reached on Monday to Thursday 8:00-5:00pm ET.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janice Mooneyham can be reached on (571) 272-6805.

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The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/F. A./
Examiner, Art Unit 4176
August 7, 2008

/Janice A. Mooneyham/
Supervisory Patent Examiner, Art Unit 3689